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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Florian Lichtenberg

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EXAMINER

SASAN, ARADHANA

ART UNIT

PAPER NUMBER

1615

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/501,395	<b>Applicant(s)</b> LICHTENBERG ET AL.	
	<b>Examiner</b> ARADHANA SASAN	<b>Art Unit</b> 1615	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 October 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4,6-15,19,21,23,25,27 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-15,19,21,23,25,27 and 29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Application***

1. The remarks and amendments filed on 10/20/09 are acknowledged.
2. Claims 5, 16-18, 20, 22, 24, 26, 28, and 30-33 were cancelled.
3. Claims 1, 3-4, 6, 12-15, and 19 were amended.
4. Claims 1-4, 6-15, 19, 21, 23, 25, 27, and 29 are included in the prosecution.

### ***Response to Arguments***

#### **Rejection of claims 1-33 under 35 USC § 102(b)**

5. In light of the amendment of claim 1 to recite the transitional phrase “consisting of”, Applicant’s arguments, see Page 6, filed 10/20/09, with respect to the rejection of claims 1-33 under 35 USC § 102(b) as being anticipated by Zhou et al. (WO 00/03692) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration new ground(s) are made under 35 USC § 103(a) over Zhou et al. (WO 00/03692) in view of Zhou et al. (US 6,017,561). Since the new ground(s) of rejection were necessitated by Applicant's amendment, this action is made FINAL.

## **NEW REJECTIONS NECESSITATED BY APPLICANT’S AMENDMENT**

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1 recites the transitional phrase “**consisting of**” which is considered closed language. However, claim 1 also recites (in part d) “... **optionally** one or more auxiliaries ...” It is unclear how a claim that recites closed language (i.e. “consisting of”) can allow optional auxiliary ingredients. Any other ingredients not encompassed by the “consisting of” language would be considered as excluded from the composition. Clarification is required.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

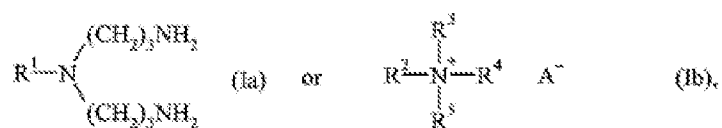
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-4, 6-15, 19, 21, 23, 25, 27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al. (WO 00/03692) in view of Zhou et al. (US 6,017,561 – Zhou ‘561 hereinafter).

The claimed invention is a process of utilizing a disinfectant composition consisting of:

a) an amine and/or quaternary ammonium salt of the general formula:

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where R<sup>1</sup> is C<sub>8-18</sub>-alkyl,

R<sup>2</sup> is benzyl or C<sub>8-18</sub>-alkyl,

R<sup>3</sup> is C<sub>1-18</sub>-alkyl or  $\text{--}[(\text{CH}_2)_2\text{O}]_n\text{R}^6$  where n = 1-20,

R<sup>4</sup> and R<sup>5</sup> independently of one another are C<sub>1-4</sub>-alkyl,

R<sup>6</sup> is hydrogen or unsubstituted or substituted phenyl,

and A<sup>-</sup> is a monovalent anion or one equivalent of a polyvalent anion of an inorganic or organic acid; and

b) at least one alkanolamine of the general formula:



where n and, if present, m and o independently of one another have the value 2 or 3, and x and y independently of one another have the value 0 or 1, or a corresponding salt; in the mass ratio a):b) of 20:1 to 1:20;

c) water, as solvent; and

d) optionally one or more auxiliaries selected from the group consisting of organic solvents, surfactants, complexing agents, fragrances and colorants.

Zhou teaches a method of decontaminating a surface by using a composition comprising a quaternary ammonium compound and water (Abstract). Quaternary

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ammonium compounds including C<sub>12-16</sub> alkyl dimethylbenzyl ammonium chloride, C<sub>8</sub>/C<sub>10</sub> alkyl dimethyl ammonium chloride, di-C<sub>8</sub> alkyl dimethyl ammonium chloride and di-C<sub>10</sub> alkyl dimethyl ammonium chloride are disclosed (Page 8, line 42 to Page 9, line 15).

Typical amounts of the quaternary ammonium compound range from about 0.01%-5% (Page 9, lines 25-30). Alkanolamines (including triethanolamine) are disclosed as components that comprise 0.01% to 5% of the composition (Page 16, lines 23-36). The method for decontaminating a surface containing microorganisms by contacting the surface with the dispensable composition is also disclosed by Zhou (Page 2, line 45 to Page 3, line 1). The surfaces that may be treated include bathroom surfaces, implements, etc., and include surfaces that harbor microorganisms, including viruses (Page 3, line 40 to Page 3, line 21). The composition can also be used as a cleaner and soil remover (Page 4, lines 29-32). "Additional adjuncts in small amounts such as buffers, fragrances, dyes and the like can be included to provide desirable attributes of such adjuncts" (Page 5, lines 4-5). Table III illustrates the virucidal efficacy of the composition when applied to a test surface. The complete inactivation of poliovirus type I is demonstrated (Page 20, Table III and Page 19, lines 38-40).

Zhou teaches aerosol compositions, and the propellant is required (Abstract).

Applicant amended claim 1 to replace the transitional phrase "comprising" with "consisting of" which is considered closed language and excludes the propellant required by Zhou.

Zhou '651 teaches an antimicrobial cleaning composition that includes a quaternary ammonium compound (Abstract) and "... can be readily applied by

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conventional dispensing means. Preferably, the composition is sprayed or otherwise applied onto a surface ..." (Col. 3, lines 1-6). The cleaning composition does not require a propellant.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of decontaminating a surface by applying a composition that is an effective virucide and that contains a quaternary ammonium salt (such as the C<sub>12-16</sub> alkyl dimethylbenzyl ammonium chloride, C<sub>8</sub>/C<sub>10</sub> alkyl dimethyl ammonium chloride, di-C<sub>8</sub> alkyl dimethyl ammonium chloride and di-C<sub>10</sub> alkyl dimethyl ammonium chloride) and an alkanolamine (triethanolamine), as suggested by Zhou, modify the aerosol composition of Zhou by eliminating the propellant in order to apply the composition in other conventional dispensing means such as by spraying a surface, as suggested by Zhou '651, and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because MPEP 2141 states that it is obvious to apply a known technique to a known method ready for improvement to yield predictable results. Zhou teaches that "... the antimicrobial compositions ... may exist as emulsions, suspensions, dispersions, solutions, or possibly, as other forms of liquids, such as microemulsions and liquid crystals" (Page 6, lines 14-21). One of ordinary skill in the art would find it obvious to use various conventional dispensing means such as spraying a liquid cleaning composition (suggested by Zhou) on a surface that are known in the art and evidenced by the teaching of Zhou '651. One of ordinary skill in the art would have a reasonable expectation of success in eliminating the propellant from the aerosol composition of

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Zhou, apply the liquid composition by spraying a surface, and achieve the desired disinfection of the surface.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Regarding instant claim 1, the limitation of the process of utilizing a disinfectant composition would have been obvious over the method of decontaminating a surface by applying the composition that is an effective virucide, as disclosed by Zhou (Page 2, line 45 to Page 3, line 1 and Table III). The limitation of a quaternary ammonium salt of the general formula disclosed in claim 1 would have been obvious over the C<sub>12-16</sub> alkyl dimethylbenzyl ammonium chloride, C<sub>8</sub>/C<sub>10</sub> alkyl dimethyl ammonium chloride, di-C<sub>8</sub> alkyl dimethyl ammonium chloride and di-C<sub>10</sub> alkyl dimethyl ammonium chloride taught by Zhou (Page 9, lines 25-30). The limitation of "at least one alkanolamine" of the general formula disclosed in claim 1 would have been obvious over the triethanolamine disclosed by Zhou (Page 16, lines 23-36). The limitation of the mass ratio of I:II (or the mass ratio of the quaternary ammonium compound: the alkanolamine) of 20:1 to 1:20 would have been obvious over the ratio of quaternary (ammonium compound: alkanolamine that ranges from (0.01%-5%): (0.01%-5%), as taught by Zhou (Page 9, lines 25-30 and Page 16, lines 23-36). The limitation of water as a solvent would have been obvious over the water in the composition taught by Zhou (Abstract).



Regarding instant claim 2, the limitation of the quaternary ammonium salt would have been obvious over the C<sub>8</sub>/C<sub>10</sub> alkyl dimethyl ammonium chloride, di-C<sub>8</sub> alkyl dimethyl ammonium chloride and di-C<sub>10</sub> alkyl dimethyl ammonium chloride, as taught by Zhou (Page 9, lines 25-30).

Regarding instant claims 3 and 12, the limitation of the alkanolamine would have been obvious over the triethanolamine taught by Zhou (Page 16, lines 23-36).

Regarding instant claims 4 and 13-15, the limitation of the mass ratio of I:II that is between 1:5 and 5:1 would have been obvious over the ratio of quaternary (ammonium compound: alkanolamine that ranges from (0.01%-5%): (0.01%-5%)), as taught by Zhou (Page 9, lines 25-30 and Page 16, lines 23-36).

Regarding instant claims 6 and 19, the limitation of the auxiliaries would have been obvious over the additional adjuncts in small amounts such as buffers, fragrances, and dyes that can be included, as taught by Zhou (Page 5, lines 4-5).

Regarding instant claims 7-10, 21, 23, 25, and 27, the limitation of surface disinfection, instrument disinfection, and laundry disinfection would have been obvious over the treatment of bathroom surfaces, implements, and the use of the composition as a cleaner and soil remover, as taught by Zhou (Page 4, lines 29-32).

Regarding instant claims 11 and 29, the limitation of the process wherein the virucidal agent of claim 1 is utilized against parvoviruses, picornaviruses or polioviruses would have been obvious over the application of the composition to a surface and the complete inactivation of poliovirus type I, as disclosed by Zhou (Page 20, Table III and Page 19, lines 38-40).

***Conclusion***

11. No claims are allowed.
12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aradhana Sasan whose telephone number is (571) 272-9022. The examiner can normally be reached Monday to Thursday from 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Wax, can be reached at 571-272-0623. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Aradhana Sasan/  
Examiner, Art Unit 1615

/Humera N. Sheikh/  
Primary Examiner, Art Unit 1615